NEW CLAIMS

1. Device for the capacitive position finding of a target ob-
    ject, particularly for performing the method according to
    one of the claims 14 to 18,
    having a plurality of capacitive probes (20, 30, 40) dis-
    tributed over a detection area (16) in which a position of
    the target object (12) is to be determined,
    characterized in that
    a dependence of the probe voltages on the spacing of the
    target object (12) from the given capacitive probe (20, 30,
    40) is evaluatable for position determination,
    that the probes (20, 30, 40) are in each case connected
    across coupling capacitances (22, 32, 42) to a voltage sup-
    ply (14) and can be supplied with a supply voltage, the ca-
    pacitances (24, 34, 44) of probes (20, 30, 40) to the envi-
    ronment together with the coupling capacitances (22, 32,
    42) in each case forming a capacitive voltage divider with
    the probe voltages as mean voltages and
    that an evaluating device (50) connected to the probes (20,
    30, 40) is provided and which enables the probe voltages to
    be processed to an output signal (52), which is a measure
    for the position of the target object (12) to be found.

2. Device according to claim 1,
    characterized in that
    the coupling capacitances (22, 32, 42) are at least partly
    constructed as discreet capacitors (23, 33, 43).

3. Device according to claims 1 or 2,

    characterized in that

    at least one of the probes (20, 30, 40) is constructed as a
    reference probe.

4. Device according to one of the claims 1 to 3,

    characterized in that

    the probes (20, 30, 40) are distributed over a three-
    dimensional detection area (16).

5. Device according to one of the claims 1 to 4,

    characterized in that

    the evaluating device (50) for each probe (20, 30, 40) has
    a rectifier (26, 36, 46).

6. Device according to one of the claims 1 to 5,

    characterized in that

    the evaluating device (50) has a central processing unit,
    particularly a microprocessor (54).

7. Device according to claim 6,

    characterized in that

    the evaluating unit (50) has a multiplexer (56) by means of
    which the probe signals of at least two probes (20, 30, 40)
    can be supplied to the central processing unit.

8. Device according to one of the claims 1 to 7,

    characterized in that

    the evaluating device (50) has a signal processor for pre-
    processing the analog probe signals.

9.   Device according to one of the claims 1 to 8,
      characterized in that
      the plurality of capacitive probes (20, 30, 40) which, in a
      first area, particularly on one side (71), of a support
      (70) are distributed over the detection area (16) in which
      the position of the target object (12) is to be found,
      that for forming the coupling capacitances (22, 32, 42) in
      a second area, particularly on a facing side (73), of the
      support (70) there is at least one coupling electrode (80)
      by means of which a supply voltage can be coupled onto the
      probes (20, 30, 40) and
      that the support (70) for forming a coupling layer (72) is
      at least partly made from a dielectric material.

10.   Device according to claim 9,
      characterized in that
      the support (70) is constructed as a more particularly
      flexible printed circuit board.

11.   Device according to one of the claims 9 or 10,
      characterized in that
      at least parts (90) of evaluating electronics are placed on
      the support (70).

12.   Device according to one of the claims 9 to 11,
      characterized in that
      the coupling electrode (80) is constructed as a unitary po-
      tential surface, particularly as a continuous, metallic
      layer.

13. Device according to one of the claims 9 to 12,
    characterized in that
    further metal layers (86) are provided for shielding or re-
    ceiving circuit components on or in support (70).

14. Method for capacitive position finding of a target object,
    in which a plurality of capacitive probes (20, 30, 40) is
    arranged over a detection area (16) in which a position of
    the target object (12) is to be determined,
    characterized in that
    the probe voltages are dependent on the spacing of the tar-
    get object from the given probe and are evaluated for de-
    termining the position of the target object,
    that the probes (20, 30, 40) are in each case supplied with
    a supply voltage across coupling capacitances (22, 32 42),
    capacitive voltage dividers with the probe voltages as mean
    voltages being formed through the coupling capacitances
    (22, 32, 42) and by the capacitances (24, 34, 44) of probes
    (20, 30, 40) to the environment varying as a result of a
    position change of the target object (12) to be detected
    and
    that the probe voltages are processed with an evaluating
    device (50) to an output signal, which is a measure of the
    position of the target object (12) to be found.

15. Method according to claim 14,
    characterized in that
    a discreet object, a liquid or a bulk material is detected.

16. Method according to claim 14 or 15,
    characterized in that
    all the coupling capacitances (22, 32, 42) are supplied
    with the same supply voltage with a given frequency.

17.   Method according to one of the claims 14 to 16,
characterized in that
the quotients of several probe voltages are formed for
evaluating the probe signals.

18.   Method according to one of the claims 14 to 17,
characterized in that
the signal voltage of at least one reference probe is taken
into account during evaluation.